

2008 University of Massachusetts Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

Our Mission

The mission of UMass Extension is to improve the health, well-being and security of youth, families and communities; conserve and enhance natural resources; and strengthen agriculture and food systems. We fulfill our mission by utilizing the research and teaching capacity of the University of Massachusetts Amherst to generate and communicate knowledge while creating approaches, methods, and tools for solving problems. UMass Extension links the Massachusetts land grant university with a larger community of people in collaborative partnerships to address issues of fundamental importance to the people of Massachusetts, New England, and the nation.

UMass Extension Critical Issues

Programs offered by UMass Extension are organized according to seven critical issues. These issues serve as a framework to measure the impact of what we do and communicate the value of our work in ways that are meaningful to a wide variety of internal and external clients and partners. The critical issues for our five year plan were determined by an extensive process that was designed to assess the priorities and perspectives of a broad range of citizens and public stakeholders in ways that are relevant to both USDA Emphasis Areas and the teaching and research capacity of the University of Massachusetts Amherst. It should also be noted that our seven critical issues overlap considerably, and that many of our specific projects and initiative will address multiple issues. Additional details and information on this process are provided in the stakeholder engagement section of this plan.

The Critical Issues identified for our plan of work are:

1. Natural Resource Based Economic Development
2. Food Production
3. Water Resource Protection
4. Land Use Management
5. Ecosystem Management, Protection and Restoration
6. Health Promotion and Disease Prevention
7. Youth Development and Engagement

Program Goals

Staff teams with expertise in our seven Critical Issue areas developed the planned programs that are included in this five year plan of work. Within these planned programs each team identified a set of outcomes for the audiences that our programs will target. These proximal outcomes are related to a set of 4 broad long-term goals that have been specified at the organizational level.

Stronger Agriculture and Food Systems - Develop and expand systems for environmentally sound and economically viable food production, distribution, access and utilization.

Improved Human Health and Well-Being - Diverse youth, families, and communities will achieve greater physical and social well-being.

Enhanced Health and Productivity of Natural Resources and Ecosystems - The quality of land, water, plant, animal, and biodiversity resources will be protected and enhanced, and healthy self-sustaining ecosystems maintained.

Stronger Local Economies - Natural and human resources will be managed or cultivated in ways that support strong local economies

Our Unique Role

UMass Extension has the unique capability of bringing the University of Massachusetts Amherst's depth and breadth of knowledge and its academic resources to bear in identifying and solving problems. Our research and teaching programs link different departments and facilitate mutually beneficial collaborations between the University and external organizations,

individuals, and businesses. In so doing, UMass Extension makes a vital contribution to the public and to the educational experiences and research opportunities of the university.

Utilizing the resources of UMass Amherst and the United States Department of Agriculture's national network of Extension programs, UMass Extension advances its organizational goals by:

- Engaging university faculty and outside partners in the identification of critical issues and priorities for research and education;
- Conducting integrated research and education programs as sustained efforts to address critical issues, resulting in tangible outcomes;
- Facilitating interdepartmental and interdisciplinary research and education programs that address critical issues;
- Contributing to the undergraduate and graduate student experience by providing opportunities for community service learning and applied research;
- Serving as a clearinghouse for the dissemination of research-based knowledge, ideas, information and techniques;
- Pioneering innovative educational approaches and technologies;
- Strengthening the ability of university departments and units to meet their outreach goals by forging partnerships and providing support.

Extension employs these methods to achieve specific impacts that have been defined within our planned programs for specific target audiences. Most Extension programs however are also designed to expand the public knowledge base and general awareness of our issues and elevate the level of public discourse. Extension programs educate a wide variety of citizens, including individuals who make (or have the power to influence) decisions with public consequences. Extension programs seek to promote an understanding of the consequences of various alternatives and to encourage well-informed policy decisions that better serve the public interest.

Scope of Program and FTE's

FTE's reported in this plan of work include faculty and professional staff supported by Smith Lever 3-d funds and the Family Nutrition Program (FNS Food Stamp Education), as well as contracts, fees and gifts. Specifically, FTE's devoted to EFNEP and FNP represent, in FY07, approximately 36% of total FTE in this plan, working primarily in the Health Promotion, Food Safety and Youth Development and Engagement planned program areas.

Total Actual Amount of professional FTEs/SYs for this State

Year:2008	Extension		Research	
	1862	1890	1862	1890
Plan	94.3	0.0	0.0	0.0
Actual	105.2	0.0	0.0	0.0

II. Merit Review Process

1. The Merit Review Process that was Employed for this year

- Internal University Panel
- External University Panel
- External Non-University Panel

2. Brief Explanation

Internal University Panel

UMass Extension collaborates with department heads from the College of Natural Resources and the Environment and the School of Public Health and Health Sciences on the development of our Plan of Work. The Director of the Agricultural Experiment Station and Vice Provost for University Outreach also participate in this annual review.

External Non-University Panel:

The Massachusetts legislature established a Board of Public Overseers to provide advice and oversight to UMass Extension. This 15 member board, comprised of representatives of constituent organizations, meets quarterly to review and advise UMass Extension and the Chancellor the UMass Amherst. Review of the Plan of Work and Annual Report is a major function of this board. Our annual project plans and reports are now posted on line (<http://www.umassextension.org/index.php/about-extension/plans-reports>) to facilitate review by the Board of Public Overseers.

External University Panel

Massachusetts entered into a formal partnership with Cooperative Extension in Maine, New Hampshire, and Vermont in 2004 to develop and implement a web-based planning and reporting system. As a result of this very successful (and unique) partnership we share a planning and reporting system that allows each of use to view plans and reports of the other states. We have also agreed to provide Merit Review for each other on a rotating basis so that each state in the partnership gets a thorough, expert-review of their state plan of work every four years. In addition to providing feedback to one another, this rotation asks staff to volunteer to be reviewers to look carefully at plans from other states with similar goals and outcomes to their own. For example, 4-H youth development staff in ME, VT, and MA volunteered to review the 4-H youth development plans for NH in 2007 and Agriculture staff reviewed Agriculture plans. This system not only provided New Hampshire with valuable expert-review, but also increased the level of awareness of potential shared programs in neighboring states and helped the reviewers to reflect more critically on their own plans. New Hampshire was the first state to undergo review in 2007; Vermont was reviewed this year. The review for Maine will occur in 2009 and Massachusetts in 2010.

A merit review score sheet was developed jointly so that a similar process would be used for each state. Vermont provided access to their plans through our common planning and reporting system. The other three states recruited separate teams with content area knowledge to review Vermont's three planned programs in Agriculture and Environmental Sustainability, Community Development and the Personal and Intellectual Development of Youth and Health. One person from each of the states summarized reviewer scores and comments and prepared and submitted a report to Vermont. The reports are shared with staff who are developing the planned programs and suggestions are incorporated into next year's plan.

III. Stakeholder Input

1. Actions taken to seek stakeholder input that encouraged their participation

- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals
- Targeted invitation to selected individuals from general public
- Survey of traditional stakeholder individuals
- Survey of the general public

Brief Explanation

For our initial five-year plan (2007-2011), UMass Extension initiated an ambitious process to obtain input from a variety of stakeholders and citizens who are interested in and value the work that Extension does. Our Stakeholder Engagement process has helped us to plan and implement programs that are responsive to state and local needs. Stakeholder Engagement involved a variety of activities that are reflected in our 2008-2012 Plan of Work. These include:

Web-based stakeholder survey
Public Forums
Assessment of UMass Faculty Interests
Focus Group with State Advisory Board

2(A). A brief statement of the process that was used by the recipient institution to identify individuals and groups stakeholders and to collect input from them**1. Method to identify individuals and groups**

- Use Advisory Committees
- Use Internal Focus Groups
- Open Listening Sessions
- Use Surveys
- Other (Hired Independent Consultants)

Brief Explanation

Internal professional staff members and our advisory boards identified a list of 768 stakeholders who received surveys and were invited to public forum. A team of consultants identified existing and potential faculty partners.

2(B). A brief statement of the process that was used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them**1. Methods for collecting Stakeholder Input**

- Survey of traditional Stakeholder individuals
- Meeting specifically with non-traditional groups
- Survey specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public

Brief ExplanationWeb-based Stakeholder Survey

In March 2006, UMass Extension administered a web-based survey to a broad range of citizens and stakeholders in preparation for the development of a 5-year Plan of Work. The goal of the survey was to obtain information to help Extension plan and implement programs that are responsive to state and local needs. Extension administrators and program leaders identified 8 primary topic areas for the stakeholder survey that were based upon our USDA mission, research and teaching interests of UMass faculty and Extension staff capacity. Extension professional staff, state and federal agency representatives, and members of our state advisory board were asked to provide email contact information for individuals they work with or know of, who possess comprehensive knowledge and a broad perspective in these eight areas. Seven hundred sixty-eight (768) individuals were contacted via email. A total of 378 surveys were returned, yielding a (conservative estimated) response rate of 41.2%. These individuals were subsequently sent email messages that directed them to a page on our website where the results from the survey were posted.

Public Forums

UMass Extension sponsored two Public Forums in April 2006 to obtain input for our 5-year Plan of Work. At each forum we solicited comments from citizens we work with, or who are interested in and value our work, to help us plan and implement programs that are responsive to state and local needs. At each event we briefly reviewed our Plan of Work development process and presented results from our online stakeholder survey. Individuals were given up to 5 minutes to deliver comments and also asked to submit copies of their comments in writing. Only six individuals attended these forums and submitted comments, which were directed to our planning teams.

Assessment of UMass Faculty Interests

A consulting team was hired by UMass Extension to conduct the initial part of this assessment. The consultants first reviewed 11 Emphasis Areas specified by the US Department of Agriculture and then conducted a web-scan of university departments and faculty websites. Consultants identified a list of faculty whose interests fit within the USDA areas. Twenty-six interviews were conducted to understand the applied research interests of each faculty member. Faculty who we were not able to interview were sent, via email, a request to complete a brief survey which asked them about their work that engages individuals, communities and groups outside the university. Sixty-seven faculty were contacted and responses were received from twenty-five. A report was issued to summarize information obtained through interviews and surveys of faculty interests. This document has served primarily as an internal resource to UMass Extension planning teams as they developed broad 5-year plans that address critical issues in Massachusetts.

Focus Group

In March 2007, UMass Extension conducted a professionally facilitated focus group with our governor-appointed state advisory board (Board of Public Overseers) to deepen our understanding of our stakeholder priorities and the appropriate roles and methods for UMass Extension.

3. A statement of how the input was considered

- To Identify Emerging Issues
- In the Action Plans
- To Set Priorities

Brief Explanation

Extension Planning Teams were established with knowledge and expertise in our seven (7) Critical Issue areas. Team consisted primarily of professional program staff, with some participation by extension administrators and academic faculty. Each team considered the information obtained through the various elements of the Extension Stakeholder Engagement Process as they developed a broad organizational plan (Issue Plan). These Issue Plans were used as the basis for our planned programs in this report. As such, they identify priorities or key focus areas within each issue. Once priorities were established, teams identified outcomes related to these priorities. Outcomes are the changes in behavior or knowledge that should occur if the projects that address this issue are to be effective.

Brief Explanation of what you learned from your Stakeholders

In addition to providing a framework and background for identification of our seven critical issues, stakeholder feedback helped us to identify "Energy" as an issue that UMass Extension should address, but for which we currently have limited staff capacity: We continue to explore options for developing programming efforts in this and other emerging areas.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
2443576	0	0	0

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	2568482	0	0	0
Actual Matching	2568482	0	0	0
Actual All Other	9130215	0	0	0
Total Actual Expended	14267179	0	0	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous years				
Carryover	124906	0	0	0

V. Planned Program Table of Content

S. NO.	PROGRAM NAME
1	Administration and Organizational Development (Administrative Plan)
2	Ecosystem Management, Protection And Restoration
3	Health Promotion and Disease Prevention
4	Land Use Management
5	Natural Resource-Based Economic Development
6	Water Resource Protection
7	Youth Development and Engagement
8	Food Production

Program #1**V(A). Planned Program (Summary)****1. Name of the Planned Program**

Administration and Organizational Development (Administrative Plan)

V(B). Program Knowledge Area(s)**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
901	Program and Project Design, and Statistics	20%			
902	Administration of Projects and Programs	50%			
903	Communication, Education, and Information Delivery	30%			
	Total	100%			

V(C). Planned Program (Inputs)**1. Actual amount of professional FTE/SYs expended this Program**

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	11.2	0.0	0.0	0.0
Actual	11.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1278900	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
304920	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
291412	0	0	0

V(D). Planned Program (Activity)**1. Brief description of the Activity**

This administrative plan is used primarily as a mechanism to account for the time and effort expended by UMass Extension Administration in support of activities implemented within the seven other planned programs. Because there are no external audiences associated with this plan, no outputs or outcomes are reported.

•Administrative activities and processes include: •Financial Management •Human Resource Management •Legal, Risk and Volunteer Management •Internal and External Relations •Program Assessment and Evaluation •Marketing and Communication •Fundraising and Grant Program Development •Planning, Evaluation and Reporting

Organizational Development activities and processes include:

•Extension-wide Staff Development Plan •Individual Development Plans •Extension Staff Training and Development Series •Civil Rights Plan •Revised Public Notification Plans •Data Collection •Civil Rights Training Series •Access to all Equal Opportunity Policies, Directives and Offices •Review of Current Program Partnerships •Recruitment, Hiring, and Succession Planning •Human Resource Policy and Procedures Review •Extension-wide Strategic Plan •Extension Program Strategic Plans •Collaborative Outreach Administrative Department Plans

2. Brief description of the target audience

University Administrators
 Federal and County Extension Program Administrators (USDA/CSREES)
 UMass Extension Faculty and Staff
 Public Stakeholders

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	0	0	0	0
2008	200	50	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	0	
2008	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Administrative Systems and Procedures
- Not reporting on this Output for this Annual Report*

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Massachusetts Extensions programs and staff are sustained and advanced, consistent with organizational expectations and stakeholder needs.

Outcome #1

1. Outcome Measures

Massachusetts Extensions programs and staff are sustained and advanced, consistent with organizational expectations and stakeholder needs.

Not reporting on this Outcome for this Annual Report

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Retrospective (post program)
- During (during program)
- Case Study
- Other (Fiscal, Legal Liability Audits)

Evaluation Results

Key Items of Evaluation

Program #2

V(A). Planned Program (Summary)

1. Name of the Planned Program

Ecosystem Management, Protection And Restoration

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
131	Alternative Uses of Land	25%			
133	Pollution Prevention and Mitigation	25%			
135	Aquatic and Terrestrial Wildlife	25%			
136	Conservation of Biological Diversity	25%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	3.8	0.0	0.0	0.0
Actual	7.1	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
182678	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
279967	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
969296	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Analytic tools and techniques
- Applied research
- CD, DVD, Podcast or other educational media
- Committee
- Conference
- Consulting
- Diagnostic Service
- Facilitated meeting
- Single day workshop, class or event
- Survey or needs assessment
- Teaching - Credit
- Technical report/manual
- Website
- Workshop series or educational course

2. Brief description of the target audience

- Natural Resource Agencies
- Regional Planning Authorities
- Development and Planning Agencies
- Municipalities
- Conservation Organizations
- Landowners and Land Managers
- Business/Industry

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	6605	20756	0	1000
2008	5289	25239	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	2	0	
2008	0	0	0

V(F). State Defined Outputs

Output Target

Output #1**Output Measure**

- Conferences

Year	Target	Actual
2008	7	1

Output #2**Output Measure**

- Demonstrations

Not reporting on this Output for this Annual Report

Output #3**Output Measure**

- Diagnostic Services

Year	Target	Actual
2008	3120	2570

Output #4**Output Measure**

- Facilitated Meetings

Year	Target	Actual
2008	9	13

Output #5**Output Measure**

- Individual Consultations (phone, email)

Not reporting on this Output for this Annual Report

Output #6**Output Measure**

- Invited Speakers

Not reporting on this Output for this Annual Report

Output #7**Output Measure**

- Single day workshops, classes or events

Year	Target	Actual
2008	79	40

Output #8**Output Measure**

- Site visits

Not reporting on this Output for this Annual Report

Output #9**Output Measure**

- Fact Sheets

Not reporting on this Output for this Annual Report

Output #10**Output Measure**

- Newsletters

Not reporting on this Output for this Annual Report

Output #11**Output Measure**

- Websites

Year	Target	Actual
2008	11	9

Output #12**Output Measure**

- Web content/web page contributions

Not reporting on this Output for this Annual Report

Output #13**Output Measure**

- Applied Research

Year	Target	Actual
2008	19	7

Output #14**Output Measure**

- Conference Posters (Peer reviewed)

Not reporting on this Output for this Annual Report

Output #15**Output Measure**

- Journal Articles (Peer reviewed)

Not reporting on this Output for this Annual Report

Output #16**Output Measure**

- Technical Reports/Manuals

Year	Target	Actual
2008	3	1

Output #17**Output Measure**

- Analytic tools and techniques

Year	Target	Actual
2008	{No Data Entered}	5

Output #18**Output Measure**

- CD, DVD, Podcast or other educational media

Year	Target	Actual
2008	{No Data Entered}	1

Output #19**Output Measure**

- Survey or Needs Assessment

Year	Target	Actual
2008	{No Data Entered}	1

Output #20**Output Measure**

- Workshop series or educational course

Year	Target	Actual
2008	{No Data Entered}	3

V(G). State Defined Outcomes**V. State Defined Outcomes Table of Content**

O No.	OUTCOME NAME
1	Participants promote, implement or participate in strategic land conservation programs that protect ecosystems, water and other natural resources
2	Participants develop the knowledge and skills to promote, implement or participate in strategic land conservation programs that protect ecosystems, water and other natural resources.
3	Participants adopt practices that minimize the impact of development projects on ecosystems, water and other natural resources
4	Participants develop the knowledge and skills to minimize the impact of development projects on ecosystems, water and other natural resources
5	Participants effectively address water and other natural resource issues during project review and permitting.
6	Participants have the knowledge and skills to effectively address water and other natural resource issues during project review and permitting.
7	Participants promote, implement or adopt sustainable resource management and environmental best management practices for operating Natural Resources-based businesses
8	Participants have the knowledge and skills to promote, implement or adopt sustainable resource management and environmental best management practices for operating Natural Resources-based businesses
9	Participants adopt land management practices that protect and enhance water, other natural resources and ecosystems
10	Participants develop the knowledge and skills to adopt land management practices that protect and enhance water, other natural resources and ecosystems
11	Participants adopt practices that reduce risk of exotic pests, diseases and invasive species
12	Participants acquire the knowledge, skills and motivation to adopt practices that reduce risk of exotic pests, diseases and invasive species.
13	Participants develop the knowledge and skills to produce legally sound land use decisions
14	Participants have the knowledge and skills to promote, implement or adopt sustainable resource management and environmental best management practices for operating natural resource based businesses
15	Participants increase their knowledge and skill for practices that increase the economic viability of natural resource-based businesses
16	Participants will acquire the knowledge and skills to lower their risk from and exposure to pesticides and fertilizers
17	Participants will adopt practices that lower the risk from and exposure to pesticides and fertilizers

Outcome #1**1. Outcome Measures**

Participants promote, implement or participate in strategic land conservation programs that protect ecosystems, water and other natural resources

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	25	506

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

There are approximately 46,500 non-industrial, private landowners in MA, with land of 10 acres or more. Collectively they own 2.2 million acres accounting for 86% of the state's forests. Our programs develop information networks of conservation-minded landowners, community leaders, and opinion makers, supported by internet resources. These networks and resources serve to inform private land management decisions that have tremendous impact on the ecosystem services our forests provide.

What has been done

Educate forest owners and community leaders who go back to their communities and promote forest conservation; A regularly updated website to inform the most common and critical landowner decisions: selling timber and planning the future of privately-owned forest land; Web-based tools that encourage landowners to share resources. Peer learning programs that connect landowners with each other and with natural resource professionals.

Results

*506 landowners were referred to a land trust by a participant in a Forest Conservation program

4. Associated Knowledge Areas

KA Code	Knowledge Area
136	Conservation of Biological Diversity
131	Alternative Uses of Land
135	Aquatic and Terrestrial Wildlife

Outcome #2**1. Outcome Measures**

Participants develop the knowledge and skills to promote, implement or participate in strategic land conservation programs that protect ecosystems, water and other natural resources.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	50	1858

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)**What has been done****Results**

*506 Landowners who participated in Forest Conservation programs understood their land conservation options

*417 Participants in Forest Conservation programs learned how to find a local land trust

4. Associated Knowledge Areas

KA Code	Knowledge Area
136	Conservation of Biological Diversity
135	Aquatic and Terrestrial Wildlife
131	Alternative Uses of Land

Outcome #3**1. Outcome Measures**

Participants adopt practices that minimize the impact of development projects on ecosystems, water and other natural resources

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	25	600

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

In Massachusetts, haphazard growth has impacted water resources, natural resource-based enterprises, open space, wildlife habitat, and community character. UMass Extension addresses these concerns through integrated research and extension initiatives that focus on habitat loss and fragmentation, establishing priorities for ecological restoration and mitigating development impacts on wildlife and ecosystems.

What has been done

A computer software program and approach to prioritizing land for conservation; Protocols to assess the impact of road-stream crossings on fish and other aquatic organism passage; Research and education to better understand the impacts of roads and highways on wildlife and ecosystems; Making science, research, and planning resources available to municipal officials; Disseminate educational materials to promote wildlife conservation.

Results

*584 road-stream crossings were evaluated and entered into the Crossings database

*16 volunteers were trained in collecting monitoring data for evaluating road-stream crossings and wildlife crossing structures

4. Associated Knowledge Areas

KA Code	Knowledge Area
136	Conservation of Biological Diversity
135	Aquatic and Terrestrial Wildlife

Outcome #4

1. Outcome Measures

Participants develop the knowledge and skills to minimize the impact of development projects on ecosystems, water and other natural resources

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	50	7545

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
136	Conservation of Biological Diversity
131	Alternative Uses of Land
135	Aquatic and Terrestrial Wildlife

Outcome #5**1. Outcome Measures**

Participants effectively address water and other natural resource issues during project review and permitting.

Not reporting on this Outcome for this Annual Report

Outcome #6**1. Outcome Measures**

Participants have the knowledge and skills to effectively address water and other natural resource issues during project review and permitting.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	50	1553

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)**What has been done****Results****4. Associated Knowledge Areas**

KA Code	Knowledge Area
133	Pollution Prevention and Mitigation
131	Alternative Uses of Land
135	Aquatic and Terrestrial Wildlife

Outcome #7**1. Outcome Measures**

Participants promote, implement or adopt sustainable resource management and environmental best management practices for operating Natural Resources-based businesses

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	25	1225

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)****What has been done****Results****4. Associated Knowledge Areas**

KA Code	Knowledge Area
136	Conservation of Biological Diversity
133	Pollution Prevention and Mitigation

Outcome #8**1. Outcome Measures**

Participants have the knowledge and skills to promote, implement or adopt sustainable resource management and environmental best management practices for operating Natural Resources-based businesses

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	50	100

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
136	Conservation of Biological Diversity
133	Pollution Prevention and Mitigation

Outcome #9**1. Outcome Measures**

Participants adopt land management practices that protect and enhance water, other natural resources and ecosystems

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	25	1005

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

*1005 Landowners were referred to a service or private forester by a participant of a Forest Conservation program

4. Associated Knowledge Areas

KA Code	Knowledge Area
131	Alternative Uses of Land
136	Conservation of Biological Diversity

Outcome #10

1. Outcome Measures

Participants develop the knowledge and skills to adopt land management practices that protect and enhance water, other natural resources and ecosystems

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	50	1612

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

- *417 Participants in Forest Conservation programs learned how to find a local service or private forester
- *495 participants acquired knowledge and skills to implement sustainable landscape management practices
- *500 participants learned how to base their pest management decisions on accurate diagnosis of plant problems
- *200 vegetable growers and turf managers adopted best management practices outlined in newsletters, fact sheets and presented in educational sessions

4. Associated Knowledge Areas

KA Code	Knowledge Area
131	Alternative Uses of Land
136	Conservation of Biological Diversity

Outcome #11

1. Outcome Measures

Participants adopt practices that reduce risk of exotic pests, diseases and invasive species

Not reporting on this Outcome for this Annual Report

Outcome #12

1. Outcome Measures

Participants acquire the knowledge, skills and motivation to adopt practices that reduce risk of exotic pests, diseases and invasive species.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	50	675

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)****What has been done****Results**

*60 growers improved skills and knowledge on how to scout for and identify pests

*115 participants acquired the knowledge and skills needed to implement sustainable landscape management practices

*500 submitters of diagnostic specimens read, understood, and implemented recommendations contained in diagnostic reports. Individuals consulted websites for more information on the plant problems they encountered

4. Associated Knowledge Areas

KA Code	Knowledge Area
136	Conservation of Biological Diversity
131	Alternative Uses of Land
133	Pollution Prevention and Mitigation
135	Aquatic and Terrestrial Wildlife

Outcome #13**1. Outcome Measures**

Participants develop the knowledge and skills to produce legally sound land use decisions

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	1216

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)****What has been done****Results****4. Associated Knowledge Areas**

KA Code	Knowledge Area
---------	----------------

131	Alternative Uses of Land
136	Conservation of Biological Diversity

Outcome #14**1. Outcome Measures**

Participants have the knowledge and skills to promote, implement or adopt sustainable resource management and environmental best management practices for operating natural resource based businesses

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	275

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
136	Conservation of Biological Diversity
131	Alternative Uses of Land

Outcome #15**1. Outcome Measures**

Participants increase their knowledge and skill for practices that increase the economic viability of natural resource-based businesses

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	485

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results**4. Associated Knowledge Areas**

KA Code	Knowledge Area
136	Conservation of Biological Diversity

Outcome #16**1. Outcome Measures**

Participants will acquire the knowledge and skills to lower their risk from and exposure to pesticides and fertilizers

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	500

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

*500 growers based their pest management decisions on accurate diagnosis of plant problems which led to fewer unnecessary or inappropriate pesticide applications

4. Associated Knowledge Areas

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife
136	Conservation of Biological Diversity

Outcome #17**1. Outcome Measures**

Participants will adopt practices that lower the risk from and exposure to pesticides and fertilizers

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	2400

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)**What has been done****Results**

*1200 Growers managed plant disease problems with cultural techniques

*600 Growers using organic methods or transitioning to organic methods used research-based information from UMass Extension

*600 Participants based pest management decisions on accurate diagnosis of problems

4. Associated Knowledge Areas

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife
133	Pollution Prevention and Mitigation

V(H). Planned Program (External Factors)**External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation**V(I). Planned Program (Evaluation Studies and Data Collection)****1. Evaluation Studies Planned**

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- Case Study
- Comparison between locales where the program operates and sites without program intervention

Evaluation Results**Key Items of Evaluation**

Program #3

V(A). Planned Program (Summary)

1. Name of the Planned Program

Health Promotion and Disease Prevention

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
703	Nutrition Education and Behavior	40%			
704	Nutrition and Hunger in the Population	10%			
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	10%			
724	Healthy Lifestyle	40%			
Total		100%			

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	32.2	0.0	0.0	0.0
Actual	46.9	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
48352	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
32243	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
3420157	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Conference
- Curriculum
- Demonstration
- Display/Exhibit
- Manuscript preparation/submission
- Newsletter
- Newspaper/Newsletter/Magazine Article
- Online Course
- Single day workshop, class or event
- Staff training
- Student Supervision
- Workshop series or educational course

2. Brief description of the target audience

- Adults

- Youth

- Women

- Minority and underserved populations

- Health educators and providers

- Teachers

- UMass faculty, students and administration

- State and local agencies

- State legislators

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	6399	32864	76332	15462
2008	11862	72877	44464	42353

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	0	
2008	0	0	0

V(F). State Defined Outputs

Output Target

Output #1**Output Measure**

- Demonstrations

Year	Target	Actual
2008	39	48

Output #2**Output Measure**

- Display/Exhibits

Year	Target	Actual
2008	52	467

Output #3**Output Measure**

- Single day workshops, classes or events

Year	Target	Actual
2008	834	592

Output #4**Output Measure**

- Workshop series or educational courses

Year	Target	Actual
2008	1955	2415

Output #5**Output Measure**

- Fact Sheets

Not reporting on this Output for this Annual Report

Output #6**Output Measure**

- Newsletters

Year	Target	Actual
2008	32	7

Output #7**Output Measure**

- Assistantships (Graduate)

Not reporting on this Output for this Annual Report

Output #8**Output Measure**

- Conference

Not reporting on this Output for this Annual Report

Output #9**Output Measure**

- Curriculum

Year	Target	Actual
2008	{No Data Entered}	1

Output #10**Output Measure**

- Newspaper/Newsletter/Magazine Article

Year	Target	Actual
2008	{No Data Entered}	25

Output #11**Output Measure**

- Online Course

Year	Target	Actual
2008	{No Data Entered}	5

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
1	Target audiences will improve diet and physical activity behaviors, to prevent overweight and obesity.
2	Target audiences will increase knowledge of healthful diets and physical activity, to prevent overweight and obesity.
3	Target audiences will improve behaviors to prevent diet-and physical activity-related diseases such as heard disease, stroke, hypertension, diabetes, and diet-related cancers.
4	Target audiences will increase knowledge to prevent diet- and physical activity-related diseases, such as heart disease, stroke, hypertension, diabetes, and diet-related cancers.
5	Target audiences will improve behaviors to prevent diseases related to women's health, such as obesity, inadequate physical activity, cardiovascular disease, diabetes, breast cancer, reproductive health and life-cycle changes (pregnancy, menopause)
6	Target audiences will increase knowledge to address women's health issues, such as obesity, inadequate physical activity, cardiovascular disease, diabetes, breast cancer, reproductive health and life-cycle changes (pregnancy, menopause)
7	Consumers, especially those at an increased risk for foodborne illness and the caregivers of this subpopulation will handle foods more safely.
8	Consumers and caregivers of at-risk consumers will increase their knowledge about safe food handling practices. Caregivers will become better informed that the persons they care for have extra risks with respect to foodborne illness.
9	Target audiences will avoid foods that cause them to have allergic reactions.
10	Target audiences will increase their knowledge about food allergies and common food allergens.
11	Participants will improve food handling behaviors to control food safety risks and hazards in all steps from food purchasing to food consumption.
12	Participants will increase their knowledge and skills to effectively control food safety risks and hazards in all steps from food purchasing to food consumption.
13	Food producers will practice Good Agricultural Practices (GAPs) and adopt safe food handling behaviors.
14	Food producers will increase knowledge of food safety issues and Good Agricultural Practices (GAPs).
15	Participants will develop, implement, and follow HACCP plans and adopt Good Manufacturing Practices (GMPs).
16	Participants will increase knowledge of HACCP planning and Good Manufacturing Practices (GMPs).
17	Teachers will teach principles of food safety to their students.
18	Teachers will increase their knowledge, skills and motivation to teach principles of food safety to their students.

Outcome #1**1. Outcome Measures**

Target audiences will improve diet and physical activity behaviors, to prevent overweight and obesity.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	500	1289

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Rates of overweight and obesity are significant problems throughout Massachusetts and the nation. UMass Extension collaborates with schools, community agencies, youth programs, and Farmers' Markets to deliver nutrition education workshops, food demonstrations, newsletters, and other nutrition education resources to low-income participants who receive food stamp program benefits to reduce the incidence of obesity and a host of related health problems.

What has been done

UMass Extension worked with 74 collaborators throughout Massachusetts to provide nutrition education through 2,093 workshop series and 592 single session workshops, reaching 43,753 individuals. We also developed and disseminated 456 displays, 14 Farmers' Market food demonstrations, follow up newsletters, and leave-behind enrichment activities for school teachers, reaching 116,776 individuals.

Results

*17 participants applied knowledge and decision-making skills as they made their food and beverage choices in the supermarket?'

*216 Participants made healthier food choices and have increased their level of physical activity.

*300 participants showed an increase in the level of physical activity

*756 participants showed improvement in one or more food resource management practices related to planning meals, comparing prices, not running out of food, and using a grocery shopping list

4. Associated Knowledge Areas

KA Code	Knowledge Area
704	Nutrition and Hunger in the Population
703	Nutrition Education and Behavior
724	Healthy Lifestyle

Outcome #2**1. Outcome Measures**

Target audiences will increase knowledge of healthful diets and physical activity, to prevent overweight and obesity.

Not reporting on this Outcome for this Annual Report

Outcome #3**1. Outcome Measures**

Target audiences will improve behaviors to prevent diet-and physical activity-related diseases such as heart disease, stroke, hypertension, diabetes, and diet-related cancers.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	500	697

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Our Expanded Food and Nutrition Education Program (EFNEP) contributes to the Health Promotion and Disease Prevention in Massachusetts by addressing issues related to healthy food choices, increasing physical activity, and handling food safely. We collaborate with community agencies, schools, youth programs, and farmers' markets to deliver nutrition education workshops and food demonstrations to low income participants in 5 target areas throughout Massachusetts.

What has been done

EFNEP provided nutrition education through 231 adult workshop series and 64 youth group series, reaching 1860 adults and 3458 youth. These youth were also reached through single session workshop. We also provided food demonstrations and healthy recipes at 30 farmers' market sites, reaching 3449 adults and 432 youth.

Results

697 participants showed improvement in one or more nutrition practices related to planning meals, making healthy food choices, preparing foods without added salt, reading nutrition labels, and having children in the family eat breakfast

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle
704	Nutrition and Hunger in the Population

Outcome #4

1. Outcome Measures

Target audiences will increase knowledge to prevent diet- and physical activity-related diseases, such as heart disease, stroke, hypertension, diabetes, and diet-related cancers.

Not reporting on this Outcome for this Annual Report

Outcome #5

1. Outcome Measures

Target audiences will improve behaviors to prevent diseases related to women's health, such as obesity, inadequate physical activity, cardiovascular disease, diabetes, breast cancer, reproductive health and life-cycle changes (pregnancy, menopause)

Not reporting on this Outcome for this Annual Report

Outcome #6

1. Outcome Measures

Target audiences will increase knowledge to address women's health issues, such as obesity, inadequate physical activity, cardiovascular disease, diabetes, breast cancer, reproductive health and life-cycle changes (pregnancy, menopause)

Not reporting on this Outcome for this Annual Report

Outcome #7

1. Outcome Measures

Consumers, especially those at an increased risk for foodborne illness and the caregivers of this subpopulation will handle foods more safely.

Not reporting on this Outcome for this Annual Report

Outcome #8

1. Outcome Measures

Consumers and caregivers of at-risk consumers will increase their knowledge about safe food handling practices. Caregivers will become better informed that the persons they care for have extra risks with respect to foodborne illness.

Not reporting on this Outcome for this Annual Report

Outcome #9

1. Outcome Measures

Target audiences will avoid foods that cause them to have allergic reactions.

Not reporting on this Outcome for this Annual Report

Outcome #10

1. Outcome Measures

Target audiences will increase their knowledge about food allergies and common food allergens.

Not reporting on this Outcome for this Annual Report

Outcome #11

1. Outcome Measures

Participants will improve food handling behaviors to control food safety risks and hazards in all steps from food purchasing to food consumption.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	75	847

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

*254 Participants showed improvement in one or more safe food handling practices related to hand washing, storing meat and dairy foods, and thawing frozen foods

*593 participants showed improvement in one or more safe food handling practices related to storing meat and dairy foods and thawing

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #12

1. Outcome Measures

Participants will increase their knowledge and skills to effectively control food safety risks and hazards in all steps from food purchasing to food consumption.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	150	342

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

According to Massachusetts Department of Public Health, more than 2,100 Massachusetts residents became ill from eating food that was contaminated with harmful microorganisms in 2007. UMass Extension creates awareness about the dangers of foodborne illness among Massachusetts residents and teaches effective prevention strategies.

What has been done

Consumers were educated about proper food handling, proper cleaning of food contact and non-food contact surfaces, and good personal hygiene through the development and dissemination of a variety of food safety educational materials.

Results

*171 Participants applied safe food handling principles throughout the flow of food in their establishments.
 *171 Participants recognized the costs of foodborne illness and the fact that foodborne-illness outbreak could result in the closure of a business.

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
724	Healthy Lifestyle

Outcome #13

1. Outcome Measures

Food producers will practice Good Agricultural Practices (GAPs) and adopt safe food handling behaviors.

Not reporting on this Outcome for this Annual Report

Outcome #14

1. Outcome Measures

Food producers will increase knowledge of food safety issues and Good Agricultural Practices (GAPs).

Not reporting on this Outcome for this Annual Report

Outcome #15

1. Outcome Measures

Participants will develop, implement, and follow HACCP plans and adopt Good Manufacturing Practices (GMPs).

Not reporting on this Outcome for this Annual Report

Outcome #16

1. Outcome Measures

Participants will increase knowledge of HACCP planning and Good Manufacturing Practices (GMPs).

Not reporting on this Outcome for this Annual Report

Outcome #17

1. Outcome Measures

Teachers will teach principles of food safety to their students.

Not reporting on this Outcome for this Annual Report

Outcome #18

1. Outcome Measures

Teachers will increase their knowledge, skills and motivation to teach principles of food safety to their students.

Not reporting on this Outcome for this Annual Report

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- Other (Focus group)

Evaluation Results

Key Items of Evaluation

Program #4

V(A). Planned Program (Summary)

1. Name of the Planned Program

Land Use Management

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
131	Alternative Uses of Land	30%			
605	Natural Resource and Environmental Economics	20%			
608	Community Resource Planning and Development	30%			
610	Domestic Policy Analysis	20%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	2.9	0.0	0.0	0.0
Actual	2.4	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
94254	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
269035	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
98876	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Conference
- Facilitated Meeting
- Fact sheet or bulletin
- Journal article (peer reviewed)
- Newspaper/Newsletter/Magazine Article
- Research or technical report
- Single day workshop, class or event
- Website
- Workshop series or educational course

2. Brief description of the target audience

- Local government officials
- State and Federal legislators
- State and Federal agencies/commissions
- Working landscape stakeholders
- Development and design communities
- Large landowners
- Non-profit conservation, land use planning and community development organizations and interested professional organizations
- Educators and outreach professionals and trainers
- Consultants and professional practitioners in land use, community planning, natural and cultural resource preservation, community development
- Regional organizations
- Other stakeholders, private citizens, students, schools

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	2030	10020	0	150
2008	2173	14211	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	0	
2008	1	0	6

V(F). State Defined Outputs

Output Target

Output #1**Output Measure**

- Conferences

Year	Target	Actual
2008	5	1

Output #2**Output Measure**

- Demonstrations

Not reporting on this Output for this Annual Report

Output #3**Output Measure**

- Facilitated Meetings

Year	Target	Actual
2008	2	12

Output #4**Output Measure**

- Single day workshops, classes or events

Year	Target	Actual
2008	96	43

Output #5**Output Measure**

- Workshop series or educational courses

Year	Target	Actual
2008	11	13

Output #6**Output Measure**

- Fact Sheets

Year	Target	Actual
2008	11	4

Output #7**Output Measure**

- Newsletters

Not reporting on this Output for this Annual Report

Output #8**Output Measure**

- Websites

Year	Target	Actual
2008	4	2

Output #9**Output Measure**

- Applied Research

Not reporting on this Output for this Annual Report

Output #10**Output Measure**

- Curriculum Development

Not reporting on this Output for this Annual Report

Output #11**Output Measure**

- Journal Article (peer reviewed)

Year	Target	Actual
2008	{No Data Entered}	1

Output #12**Output Measure**

- Newspaper/Newsletter/Magazine Article

Year	Target	Actual
2008	{No Data Entered}	6

Output #13

Output Measure

- Research or technical report

Year	Target	Actual
2008	{No Data Entered}	1

V(G). State Defined Outcomes**V. State Defined Outcomes Table of Content**

O No.	OUTCOME NAME
1	Participants promote, implement or adopt Land Use plans and programs that accommodate development in a manner that protects ecosystems, water and other natural resources
2	Participants acquire the knowledge and skills to promote, implement or adopt Land Use plans and programs that accommodate development in a manner that protects ecosystems, water and other natural resources
3	Participants effectively address water and other natural resource issues during project review and permitting.
4	Participants have the knowledge, skills to effectively address water and other natural resource issues during project review and permitting.
5	Participants produce legally sound land use decisions
6	Participants develop the knowledge and skills to legally sound land use decisions
7	Participant decisions and practices adhere to principles of sustainability and smart growth
8	Participants develop the knowledge and skills to adhere to principles of sustainability and smart growth
9	Participants promote, implement or participate in strategic land conservation programs that protect ecosystems, water and other natural resources
10	Participants develop the knowledge and skills to promote, implement or participate in strategic land conservation programs that protect ecosystems, water and other natural resources.

Outcome #1

1. Outcome Measures

Participants promote, implement or adopt Land Use plans and programs that accommodate development in a manner that protects ecosystems, water and other natural resources

Not reporting on this Outcome for this Annual Report

Outcome #2

1. Outcome Measures

Participants acquire the knowledge and skills to promote, implement or adopt Land Use plans and programs that accommodate development in a manner that protects ecosystems, water and other natural resources

Not reporting on this Outcome for this Annual Report

Outcome #3

1. Outcome Measures

Participants effectively address water and other natural resource issues during project review and permitting.

Not reporting on this Outcome for this Annual Report

Outcome #4

1. Outcome Measures

Participants have the knowledge, skills to effectively address water and other natural resource issues during project review and permitting.

Not reporting on this Outcome for this Annual Report

Outcome #5

1. Outcome Measures

Participants produce legally sound land use decisions

Not reporting on this Outcome for this Annual Report

Outcome #6

1. Outcome Measures

Participants develop the knowledge and skills to legally sound land use decisions

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	50	1000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Understanding options for sustainable land use and developing appropriate management strategies is critical for preserving the health and vitality of Massachusetts towns and cities. UMass Extension delivers training directly to municipal Planning Boards and Zoning Boards of Appeals whose members decide how their cities or towns will grow and the ways that this growth impacts land use.

What has been done

We held 29 training sessions as part of a Fall 2007 Workshop series. These state-wide workshops were attended by over 300 participants. Our 2008 Spring Conference saw the largest attendance ever, over 270 registrants from towns and cities across the state. On-demand training workshops matched trainers to three municipalities where presentations were created to meet the specific needs of each individual community.

Results

- *500 participants increased their knowledge of land use regulations and policies
- *500 practitioners and municipal board members increased their knowledge of proper and supportable legal and procedural standards in their permitting processes.

4. Associated Knowledge Areas

KA Code	Knowledge Area
610	Domestic Policy Analysis
131	Alternative Uses of Land
608	Community Resource Planning and Development

Outcome #7

1. Outcome Measures

Participant decisions and practices adhere to principles of sustainability and smart growth
Not reporting on this Outcome for this Annual Report

Outcome #8

1. Outcome Measures

Participants develop the knowledge and skills to adhere to principles of sustainability and smart growth

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	50	50

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

50 officials planned to update zoning laws and subdivision regulations to incorporate greater focus on smart growth and sustainability

4. Associated Knowledge Areas

KA Code	Knowledge Area
610	Domestic Policy Analysis

608 Community Resource Planning and Development
 131 Alternative Uses of Land

Outcome #9

1. Outcome Measures

Participants promote, implement or participate in strategic land conservation programs that protect ecosystems, water and other natural resources
Not reporting on this Outcome for this Annual Report

Outcome #10

1. Outcome Measures

Participants develop the knowledge and skills to promote, implement or participate in strategic land conservation programs that protect ecosystems, water and other natural resources.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	40	155

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Many towns and non-profit organizations in Massachusetts rely on Extension resources and referrals to address zoning laws and subdivision regulations to incorporate a greater focus on smart growth and sustainability.

What has been done

UMass Extension conducted workshops on issues such as support for farms, tax incentives for land donations, and public records/open meeting issues. We provided significant support to the Massachusetts Land Trust Coalition (MLTC) in stewarding legal interns who prepared critical educational white papers for use by the land trust community and completed a booklet of easement defense initiatives that are now being utilized not only by Massachusetts land trusts, but by other land trusts around the country as well.

Results

*155 officials updated zoning laws and subdivision regulations to incorporate greater focus on smart growth and sustainability

4. Associated Knowledge Areas

KA Code	Knowledge Area
605	Natural Resource and Environmental Economics
131	Alternative Uses of Land
608	Community Resource Planning and Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)

Evaluation Results

Key Items of Evaluation

Program #5**V(A). Planned Program (Summary)****1. Name of the Planned Program**

Natural Resource-Based Economic Development

V(B). Program Knowledge Area(s)**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
131	Alternative Uses of Land	15%			
216	Integrated Pest Management Systems	30%			
605	Natural Resource and Environmental Economics	20%			
608	Community Resource Planning and Development	15%			
723	Hazards to Human Health and Safety	20%			
	Total	100%			

V(C). Planned Program (Inputs)**1. Actual amount of professional FTE/SYs expended this Program**

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	12.5	0.0	0.0	0.0
Actual	8.5	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
149976	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
488998	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1283475	0	0	0

V(D). Planned Program (Activity)**1. Brief description of the Activity**

- Applied Research
- Calendar
- Conference
- Demonstration
- Display/Exhibit
- Email/listserv
- Facilitated meeting or focus group
- Fact sheet or bulletin
- Individual consultation
- Invited Speaker
- Needs Assessment
- Newsletter
- Newspaper/Newsletter/Magazine Article
- Professional/Trade Magazine Article
- Research or technical report
- Single day workshop, class or event
- Site Visit
- Teaching (Credit) - Guest Lecture
- Teaching (Credit) - Other
- Technical report/manual
- Web content/web page contribution
- Website
- Workshop series or educational course

2. Brief description of the target audience

- Landowners
- Resource Managers
- Horticultural Green Industry businesses and personnel
- Professional Organizations and Industry Groups
- Natural Resource Agencies
- Municipalities
- Land Trusts and Conservation Groups
- Farmers

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	9642	99024	30	0
2008	14196	579733	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	1	0	
2008	0	0	0

V(F). State Defined Outputs

Output Target

Output #1**Output Measure**

- Conferences

Year	Target	Actual
2008	7	14

Output #2**Output Measure**

- Demonstrations

Year	Target	Actual
2008	37	2

Output #3**Output Measure**

- Diagnostic Services

Not reporting on this Output for this Annual Report

Output #4**Output Measure**

- Displays/Exhibits

Year	Target	Actual
2008	3	2

Output #5**Output Measure**

- Facilitated Meetings

Year	Target	Actual
2008	15	4

Output #6**Output Measure**

- Individual Consultations (phone, email)

Year	Target	Actual
2008	190	1579

Output #7**Output Measure**

- Invited Speakers

Year	Target	Actual
2008	38	87

Output #8**Output Measure**

- Single day workshops, classes or events

Year	Target	Actual
2008	23	14

Output #9**Output Measure**

- Site visits

Year	Target	Actual
2008	48	24

Output #10**Output Measure**

- Telephone Conferences

Not reporting on this Output for this Annual Report

Output #11**Output Measure**

- Workshop series or educational courses

Year	Target	Actual
2008	26	63

Output #12**Output Measure**

- Grant and Contract Development

Not reporting on this Output for this Annual Report

Output #13**Output Measure**

- Calendars

Year	Target	Actual
2008	1	1

Output #14**Output Measure**

- Fact Sheets

Year	Target	Actual
2008	63	29

Output #15**Output Measure**

- Newsletters

Year	Target	Actual
2008	33	13

Output #16**Output Measure**

- Websites

Year	Target	Actual
2008	2	2

Output #17**Output Measure**

- Web content/web page contributions

Year	Target	Actual
2008	50	63

Output #18**Output Measure**

- Applied Research

Year	Target	Actual
2008	21	26

Output #19**Output Measure**

- Books/Book Chapters

Not reporting on this Output for this Annual Report

Output #20**Output Measure**

- Journal Articles (Peer reviewed)

Not reporting on this Output for this Annual Report

Output #21**Output Measure**

- Technical Reports/Manuals

Year	Target	Actual
2008	7	2

Output #22**Output Measure**

- Guest Lectures

Not reporting on this Output for this Annual Report

Output #23**Output Measure**

- Email/Listserv

Year	Target	Actual
2008	{No Data Entered}	47
<u>Output #24</u>		
Output Measure		
• Needs Assessment		
Year	Target	Actual
2008	{No Data Entered}	3
<u>Output #25</u>		
Output Measure		
• Newspaper/Newsletter/Magazine Article		
Year	Target	Actual
2008	{No Data Entered}	26
<u>Output #26</u>		
Output Measure		
• Professional/Trade Magazine Article		
Year	Target	Actual
2008	{No Data Entered}	3
<u>Output #27</u>		
Output Measure		
• Research or technical report		
Year	Target	Actual
2008	{No Data Entered}	13

V(G). State Defined Outcomes**V. State Defined Outcomes Table of Content**

O No.	OUTCOME NAME
1	Participants promote, implement or participate in strategic land conservation programs that protect ecosystems, water and other natural resources
2	Participants develop the knowledge and skills to promote, implement or participate in strategic land conservation programs that protect ecosystems, water and other natural resources.
3	Participants adopt practices that ensure the economic viability of natural resource-based businesses.
4	Participants increase their knowledge and skill for practices that increase the economic viability of natural resource-based businesses
5	Participants promote, implement or adopt sustainable resource management and environmental best management practices for operating Natural Resources-based businesses
6	Participants have the knowledge and skills to promote, implement or adopt sustainable resource management and environmental best management practices for operating Natural Resources-based businesses
7	Participants develop and market locally generated products and services more effectively.
8	Participants increase their knowledge and skills to develop and market locally generated products and services more effectively
9	Participants acquire the knowledge, skills and motivation to adopt practices that reduce risk of exotic pests, diseases and invasive species
10	Participants develop the knowledge and skills to adopt land management practices that protect and enhance water, other natural resources and ecosystems
11	Participants develop the knowledge and skills to adopt sustainable resource management and environmental best management practices for operating natural resource-based businesses
12	Participants will acquire the knowledge and skills to lower their risk from and exposure to pesticides and fertilizers
13	Participants will adopt practices that lower the risk from and exposure to pesticides and fertilizers
14	Participants adopt sustainable resource management and environmental best management practices for operating natural resource-based businesses

Outcome #1

1. Outcome Measures

Participants promote, implement or participate in strategic land conservation programs that protect ecosystems, water and other natural resources
Not reporting on this Outcome for this Annual Report

Outcome #2

1. Outcome Measures

Participants develop the knowledge and skills to promote, implement or participate in strategic land conservation programs that protect ecosystems, water and other natural resources.
Not reporting on this Outcome for this Annual Report

Outcome #3

1. Outcome Measures

Participants adopt practices that ensure the economic viability of natural resource-based businesses.
Not reporting on this Outcome for this Annual Report

Outcome #4

1. Outcome Measures

Participants increase their knowledge and skill for practices that increase the economic viability of natural resource-based businesses

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	80	843

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
605	Natural Resource and Environmental Economics
608	Community Resource Planning and Development
216	Integrated Pest Management Systems

Outcome #5

1. Outcome Measures

Participants promote, implement or adopt sustainable resource management and environmental best management practices for operating Natural Resources-based businesses

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	30	575

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

*575 Participants increased their use of IPM practices related to landscape management, floriculture production, turfgrass management, and vegetable production

4. Associated Knowledge Areas

KA Code	Knowledge Area
605	Natural Resource and Environmental Economics
216	Integrated Pest Management Systems

Outcome #6**1. Outcome Measures**

Participants have the knowledge and skills to promote, implement or adopt sustainable resource management and environmental best management practices for operating Natural Resources-based businesses

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	60	981

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Natural resource-based businesses in Massachusetts need to have a well-trained and knowledgeable workforce to insure the viability of their industries. UMass Extension provides education to these industries in the areas of integrated pest management, pesticide impacts on the environment, pesticide toxicity and exposure, and the use of personal protective equipment.

What has been done

We conducted 19 two-day workshops to help individuals prepare for the Massachusetts state pesticide exams and an additional 16 pesticide recertification training workshops. We also worked with the New England Pest Management Network to gather information on pest management, develop crop profiles, and pest management strategic plans.

Results

- *133 participants increased their knowledge of integrated pest management techniques
- *206 participants increased their knowledge of the impacts of pesticides on the environment
- *485 Participants acquired the knowledge and skills needed to implement sustainable landscape management practices

4. Associated Knowledge Areas

KA Code	Knowledge Area
605	Natural Resource and Environmental Economics
723	Hazards to Human Health and Safety
216	Integrated Pest Management Systems

Outcome #7**1. Outcome Measures**

Participants develop and market locally generated products and services more effectively.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	30	266

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

If local farms are going to thrive in Massachusetts, growers must continually strive to improve production efficiency, expand species diversity, explore marketing opportunities, understand farm ecology, and evaluate profitability. UMass Extension provides ready access to current research-based information on new and alternative fruit crops and varieties, advanced horticultural management techniques, marketing strategies, and innovative practices to manage weeds, disease and insects.

What has been done

A variety of formats are used to disseminate research-based information and resources in order to reach a broad constituency of growers. These include: twilight meetings, conferences pest management guides, newsletters, individual consultation, websites and funded research projects.

Results

- *145 Participants diversified their operations with new crops or products
- *121 Participants expanded their marketing opportunities using technologies such as season extension or value added production

4. Associated Knowledge Areas

KA Code	Knowledge Area
605	Natural Resource and Environmental Economics

Outcome #8

1. Outcome Measures

Participants increase their knowledge and skills to develop and market locally generated products and services more effectively
Not reporting on this Outcome for this Annual Report

Outcome #9

1. Outcome Measures

Participants acquire the knowledge, skills and motivation to adopt practices that reduce risk of exotic pests, diseases and invasive species

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	1210

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
131	Alternative Uses of Land

Outcome #10

1. Outcome Measures

Participants develop the knowledge and skills to adopt land management practices that protect and enhance water, other natural resources and ecosystems

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	4203

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done**Results****4. Associated Knowledge Areas**

KA Code	Knowledge Area
605	Natural Resource and Environmental Economics
131	Alternative Uses of Land
608	Community Resource Planning and Development

Outcome #11**1. Outcome Measures**

Participants develop the knowledge and skills to adopt sustainable resource management and environmental best management practices for operating natural resource-based businesses

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	5699

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results**4. Associated Knowledge Areas**

KA Code	Knowledge Area
605	Natural Resource and Environmental Economics

Outcome #12**1. Outcome Measures**

Participants will acquire the knowledge and skills to lower their risk from and exposure to pesticides and fertilizers

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	350

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #13**1. Outcome Measures**

Participants will adopt practices that lower the risk from and exposure to pesticides and fertilizers

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	2623

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #14**1. Outcome Measures**

Participants adopt sustainable resource management and environmental best management practices for operating natural resource-based businesses

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	615

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Program are focused on maintaining economic viability for the floriculture and greenhouse industries and enhancing environmental sustainability through integrated pest management, organic production, water and energy conservation and renewable energy options for heating greenhouses.

What has been done

Programs addressing these issues were delivered through a variety of educational opportunities including workshops and conferences, grower site visits, newsletters, two websites (weblog) and diagnostic services. In addition growers were engaged in a research project to recycle cranberry waste for use by the horticultural industry.

Results

*615 Greenhouse growers used more environmentally sound pest control methods

4. Associated Knowledge Areas

KA Code	Knowledge Area
605	Natural Resource and Environmental Economics
216	Integrated Pest Management Systems

V(H). Planned Program (External Factors)**External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)**1. Evaluation Studies Planned**

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

Program #6

V(A). Planned Program (Summary)

1. Name of the Planned Program

Water Resource Protection

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
111	Conservation and Efficient Use of Water	15%			
112	Watershed Protection and Management	40%			
133	Pollution Prevention and Mitigation	25%			
135	Aquatic and Terrestrial Wildlife	20%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	7.4	0.0	0.0	0.0
Actual	4.6	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
78248	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
363287	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
495256	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Applied research
- Conference
- Conference paper - peer reviewed
- Demonstration
- Fact sheet or bulletin
- Journal article - peer reviewed
- Newsletter
- Single day workshop, class or event
- Site visit
- Technical report/manual
- Website

2. Brief description of the target audience

- Farmers
- Horticultural Green Industry businesses and personnel (landscape, lawn care, golf, athletic field, public and private school and facilities, municipalities and other publicly owned properties)
- Land owners and Land Managers
- Natural Resource Professionals
- Municipalities
- Environmental Protection Groups and Organizations
- Professional Organizations and Industry Groups Business/Industry

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	4661	13871	250	1000
2008	4962	16810	61	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	2	0	
2008	1	0	1

V(F). State Defined Outputs**Output Target****Output #1****Output Measure**

- Conferences

Year	Target	Actual
2008	10	2

Output #2**Output Measure**

- Demonstrations

Year	Target	Actual
2008	76	40

Output #3**Output Measure**

- Displays/Exhibits

Not reporting on this Output for this Annual Report

Output #4**Output Measure**

- Facilitated Meetings

Not reporting on this Output for this Annual Report

Output #5**Output Measure**

- Consultations (phone, email)

Not reporting on this Output for this Annual Report

Output #6**Output Measure**

- Invited Speakers

Not reporting on this Output for this Annual Report

Output #7**Output Measure**

- Single day workshops, classes or events

Year	Target	Actual
2008	41	13

Output #8**Output Measure**

- Site visits

Year	Target	Actual
2008	82	65

Output #9**Output Measure**

- Workshop series or educational courses

Not reporting on this Output for this Annual Report

Output #10**Output Measure**

- Fact Sheets

Year	Target	Actual
2008	18	43

Output #11**Output Measure**

- Newsletters

Year	Target	Actual
2008	14	4

Output #12**Output Measure**

- Websites

Year	Target	Actual
2008	15	1

Output #13**Output Measure**

- Web content/web page contributions

Not reporting on this Output for this Annual Report

Output #14**Output Measure**

- Applied Research

Year	Target	Actual
2008	12	151

Output #15**Output Measure**

- Conference Posters (Peer reviewed)

Not reporting on this Output for this Annual Report

Output #16**Output Measure**

- Journal Articles (Peer reviewed)

Year	Target	Actual
2008	1	1

Output #17**Output Measure**

- Technical Reports/Manuals

Year	Target	Actual
2008	3	12

Output #18**Output Measure**

- Conference Paper (Peer Reviewed)

Year	Target	Actual
2008	{No Data Entered}	2

Output #19**Output Measure**

- Technical report/Manual

Year	Target	Actual
2008	{No Data Entered}	10

Output #20**Output Measure**

- Journal Article (peer reviewed)

Year	Target	Actual
2008	{No Data Entered}	1

V(G). State Defined Outcomes**V. State Defined Outcomes Table of Content**

O No.	OUTCOME NAME
1	Participants promote, implement or adopt Land Use plans and programs that accommodate development in a manner that protects ecosystems, water and other natural resources
2	Participants acquire the knowledge and skills to promote, implement or adopt Land Use plans and programs that accommodate development in a manner that protects ecosystems, water and other natural resources
3	Participants effectively address water and other natural resource issues during project review and permitting.
4	Participants have the knowledge and skills to effectively address water and other natural resource issues during project review and permitting.
5	Participants promote, implement or participate in strategic land conservation programs that protect ecosystems, water and other natural resources
6	Participants develop the knowledge and skills to promote, implement or participate in strategic land conservation programs that protect ecosystems, water and other natural resources.
7	Participants will adopt practices to ensure adequate supplies of high quality drinking water
8	Participants acquire the knowledge and skills to ensure adequate supplies of high quality drinking water
9	Participants adopt sustainable resource management and environmental best management practices for operating Natural Resources-based businesses
10	Participants develop the knowledge and skills to adopt sustainable resource management and environmental best management practices for operating Natural Resources-based businesses
11	Participants adopt practices that minimize the impact of development projects on ecosystems, water and other natural resources
12	Participants develop the knowledge and skills to minimize the impact of development projects on ecosystems, water and other natural resources
13	Participants adopt land management practices that protect and enhance water, other natural resources and ecosystems
14	Participants develop the knowledge and skills to adopt land management practices that protect and enhance water, other natural resources and ecosystems
15	Participants acquire the knowledge, skills and motivation to adopt practices that reduce the risk of exotic pests, diseases and invasive species
16	Participants have the knowledge and skills to promote, implement or adopt sustainable resource management and environmental best management practices for operating Natural Resource-based businesses
17	Participants increase their knowledge and skill for practices that increase the economic viability of natural resource-based businesses

Outcome #1

1. Outcome Measures

Participants promote, implement or adopt Land Use plans and programs that accommodate development in a manner that protects ecosystems, water and other natural resources

Not reporting on this Outcome for this Annual Report

Outcome #2

1. Outcome Measures

Participants acquire the knowledge and skills to promote, implement or adopt Land Use plans and programs that accommodate development in a manner that protects ecosystems, water and other natural resources

Not reporting on this Outcome for this Annual Report

Outcome #3

1. Outcome Measures

Participants effectively address water and other natural resource issues during project review and permitting.

Not reporting on this Outcome for this Annual Report

Outcome #4

1. Outcome Measures

Participants have the knowledge and skills to effectively address water and other natural resource issues during project review and permitting.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	40	43

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

*43 participants learned to manage manure and chemical use, including fertilizers, in ways which optimize agricultural benefit and minimize negative environmental impacts

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation

Outcome #5

1. Outcome Measures

Participants promote, implement or participate in strategic land conservation programs that protect ecosystems, water and other natural resources
Not reporting on this Outcome for this Annual Report

Outcome #6

1. Outcome Measures

Participants develop the knowledge and skills to promote, implement or participate in strategic land conservation programs that protect ecosystems, water and other natural resources.
Not reporting on this Outcome for this Annual Report

Outcome #7

1. Outcome Measures

Participants will adopt practices to ensure adequate supplies of high quality drinking water
Not reporting on this Outcome for this Annual Report

Outcome #8

1. Outcome Measures

Participants acquire the knowledge and skills to ensure adequate supplies of high quality drinking water
Not reporting on this Outcome for this Annual Report

Outcome #9

1. Outcome Measures

Participants adopt sustainable resource management and environmental best management practices for operating Natural Resources-based businesses

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	30	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife

Outcome #10**1. Outcome Measures**

Participants develop the knowledge and skills to adopt sustainable resource management and environmental best management practices for operating Natural Resources-based businesses

Not reporting on this Outcome for this Annual Report

Outcome #11**1. Outcome Measures**

Participants adopt practices that minimize the impact of development projects on ecosystems, water and other natural resources

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	25	17

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

*5 participants adopted environmentally sound grazing systems

*12 livestock producers adopted a relatively simple method to determine if the current nitrogen application rate on their crops is excessive

4. Associated Knowledge Areas

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation

Outcome #12**1. Outcome Measures**

Participants develop the knowledge and skills to minimize the impact of development projects on ecosystems, water and other natural resources

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	40	88

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)****What has been done****Results**

*88 people/agencies possessed the information (i.e. water quality data) and knowledge to initiate programs or make decisions on development projects that protect ecosystems, water and other natural resources

4. Associated Knowledge Areas

KA Code	Knowledge Area
133	Pollution Prevention and Mitigation
135	Aquatic and Terrestrial Wildlife
112	Watershed Protection and Management

Outcome #13**1. Outcome Measures**

Participants adopt land management practices that protect and enhance water, other natural resources and ecosystems

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	50	0

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife
133	Pollution Prevention and Mitigation
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management

Outcome #14**1. Outcome Measures**

Participants develop the knowledge and skills to adopt land management practices that protect and enhance water, other natural resources and ecosystems

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	90	155

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

*110 Natural resource-based businesses and land managers learned about economically feasible turf best management practices that protect water resources and environmental quality

*45 participants increased their knowledge/ability to distinguish and monitor nutrient imbalances on their farm

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
135	Aquatic and Terrestrial Wildlife
133	Pollution Prevention and Mitigation

Outcome #15**1. Outcome Measures**

Participants acquire the knowledge, skills and motivation to adopt practices that reduce the risk of exotic pests, diseases and invasive species

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	391

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Water monitoring (physical, chemical and biological) and use of monitoring data can improve management, protection and restoration of water resources and natural ecosystems. Extension partnerships provide unique opportunities for developing a science-based, integrated, holistic approach, functioning on all levels, from local to national, to protect our ecosystems and water resources.

What has been done

A day-long interactive workshop to help volunteer water quality monitoring coordinators; A Volunteer Monitoring Survey to determine their effectiveness in collecting water quality information; A conference to share strategies for the effective translation of scientific knowledge into resource management, protection and restoration programs.

Results

- *263 people/organizations whose knowledge or skills increased with regard to monitoring water bodies for invasive species
- *20 people/organizations monitored water bodies for invasive species
- *108 people/organizations possessed the knowledge of how to translate monitoring programs to effective resource management, protection or restoration projects, including educational/outreach programs

4. Associated Knowledge Areas

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife
112	Watershed Protection and Management

Outcome #16

1. Outcome Measures

Participants have the knowledge and skills to promote, implement or adopt sustainable resource management and environmental best management practices for operating Natural Resource-based businesses

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	20

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

*20 participants learned practices that reduced the risk of environmental pollution of equine operations including pest and odor control, fencing, grazing, runoff, etc...

4. Associated Knowledge Areas

KA Code	Knowledge Area
133	Pollution Prevention and Mitigation
112	Watershed Protection and Management

Outcome #17

1. Outcome Measures

Participants increase their knowledge and skill for practices that increase the economic viability of natural resource-based businesses

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	43

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Nitrogen fertilizer is a major input for annual crops and grass forages. In 2006, an Extension survey conducted on dairy and livestock farms highlighted various options for refining and optimizing nutrient planning and on-farm feed production.

What has been done

UMass Extension initiated several state wide on-farm demonstrations to provide information on various nitrogen sufficiency tests to ensure that nitrogen sources, including manure and commercial nitrogen fertilizers, are used efficiently in the production of feed and animal products, and in ways that protect water quality.

Results

*43 participants learned to manage manure and chemical use, including fertilizers, in ways which optimize agricultural benefit and minimize negative impacts on water resources

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
135	Aquatic and Terrestrial Wildlife

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

Program #7**V(A). Planned Program (Summary)****1. Name of the Planned Program**

Youth Development and Engagement

V(B). Program Knowledge Area(s)**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
724	Healthy Lifestyle	10%			
805	Community Institutions, Health, and Social Services	10%			
806	Youth Development	80%			
	Total	100%			

V(C). Planned Program (Inputs)**1. Actual amount of professional FTE/SYs expended this Program**

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	17.5	0.0	0.0	0.0
Actual	14.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
536094	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
152807	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1080176	0	0	0

V(D). Planned Program (Activity)**1. Brief description of the Activity**

- 4-H Club
- 4-H Records
- 4-H Recruitment
- Administration
- Conference
- Curriculum Development
- Disseminate Support Materials
- Invited Speaker
- Newsletter
- Promotional Event
- Single day workshop, class or event
- UMass Student Recruitment
- Volunteer Management
- Workshop series or educational course

2. Brief description of the target audience

- Youth from all backgrounds
- Adults from all backgrounds (volunteers, parents, collaborating organization staff)
- Youth Serving Organizations and Programs from diverse communities (including K-12, Home Schooled youth, and Camps)
 - Community Coalitions
 - UMass Amherst Faculty
 - Faculty from other colleges and universities

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	2839	10571	3241	8395
2008	3740	45000	21250	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)**Number of Peer Reviewed Publications**

	Extension	Research	Total
Plan	0	0	
2008	0	0	0

V(F). State Defined Outputs**Output Target**

Output #1**Output Measure**

- 4H Clubs

Year	Target	Actual
2008	43	358

Output #2**Output Measure**

- Conferences

Year	Target	Actual
2008	2	1

Output #3**Output Measure**

- Displays/Exhibits

Not reporting on this Output for this Annual Report

Output #4**Output Measure**

- Facilitated Meetings

Not reporting on this Output for this Annual Report

Output #5**Output Measure**

- Invited Speakers

Year	Target	Actual
2008	25	14

Output #6**Output Measure**

- Promotional Events

Year	Target	Actual
2008	47	9

Output #7**Output Measure**

- Single day workshops, classes or events

Year	Target	Actual
2008	57	120

Output #8**Output Measure**

- Site visits

Not reporting on this Output for this Annual Report

Output #9**Output Measure**

- Student Recruitment

Not reporting on this Output for this Annual Report

Output #10**Output Measure**

- Telephone Conferences

Not reporting on this Output for this Annual Report

Output #11**Output Measure**

- Workshop series or educational courses

Year	Target	Actual
2008	101	67

Output #12**Output Measure**

- Grant and Contract Development

Not reporting on this Output for this Annual Report

Output #13

Output Measure

- Newsletters

Year	Target	Actual
2008	44	24

Output #14

Output Measure

- Promotional Materials

Not reporting on this Output for this Annual Report

Output #15

Output Measure

- Websites

Not reporting on this Output for this Annual Report

Output #16

Output Measure

- Curriculum

Year	Target	Actual
2008	{No Data Entered}	3

V(G). State Defined Outcomes**V. State Defined Outcomes Table of Content**

O No.	OUTCOME NAME
1	Youth will work with, learn from and value others from diverse backgrounds
2	Youth increase their knowledge and ability to interact with others from diverse backgrounds.
3	Youth engage in community service learning
4	Youth develop the knowledge and skill necessary to engage in community service learning
5	Youth practice competent, applied science
6	Youth develop the knowledge and skills needed to practice competent, applied science
7	Youth are effective in planning, organizing, resource management and record keeping
8	Youth develop the knowledge and skills to become better planners
9	Youth increase their organizational skills
10	Youth develop the knowledge and skills to manage their resources
11	Youth develop the knowledge and skills to keep records
12	Youth are effective team members, communicators, and leaders
13	Youth increase their team membership skills.
14	Youth increase their communication skills.
15	Youth increase their knowledge of the components of effective leadership
16	Youth build successful partnerships with adults
17	Youth increase their ability to relate to and partner with adults.
18	Youth adopt behaviors that will help them succeed academically and in the workplace
19	Youth increase skills for acquiring and maintaining employment.
20	Youth develop knowledge and skills that will help them succeed academically
21	Program staff from youth-serving organizations make effective use of youth development best practices
22	Program staff from youth serving organizations increase their knowledge of the components that contribute to a successful youth development program
23	Youth will improve diet and physical activity behaviors, to prevent overweight and obesity.
24	Youth will increase knowledge of healthful diets and physical activity, to prevent overweight and obesity.
25	Participants develop the knowledge and skills to adhere to principles of sustainability and smart growth
26	Youth are more effective communicators

Outcome #1**1. Outcome Measures**

Youth will work with, learn from and value others from diverse backgrounds

Not reporting on this Outcome for this Annual Report

Outcome #2**1. Outcome Measures**

Youth increase their knowledge and ability to interact with others from diverse backgrounds.

Not reporting on this Outcome for this Annual Report

Outcome #3**1. Outcome Measures**

Youth engage in community service learning

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	80	235

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Thousands of children in Massachusetts are experiencing the deployment of a family member who is serving in the Global War on Terrorism. These children need support and connection to informed people who care. Youth (ages 5-18) with deployed parents are connected with 4-H resources and opportunities.

What has been done

Operation Military Kids (OMK) distributed 595 'Hero Packs.' Packs contain a thank-you letter written by a non-military youth and items to help children stay in touch with their loved ones. Hero Totes and Hero Blankets made from fleece or handmade quilts were provided for children under 5 years of age. OMK regional team members staffed an additional 21 information sessions around the Commonwealth, reaching over 2900 people with the OMK message of supporting military children.

Results

*54 youth were involved with teams meeting the standards for the Massachusetts Envirothon community action award

*181 Youth participated in community service projects by writing Hero Pack letters or cards

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development
805	Community Institutions, Health, and Social Services

Outcome #4**1. Outcome Measures**

Youth develop the knowledge and skill necessary to engage in community service learning

Not reporting on this Outcome for this Annual Report

Outcome #5**1. Outcome Measures**

Youth practice competent, applied science

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	200	1060

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)****What has been done****Results**

*1060 youth demonstrated science skills in their 4-H project area and in other venues

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #6**1. Outcome Measures**

Youth develop the knowledge and skills needed to practice competent, applied science

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	0	848

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)****What has been done****Results**

*197 youth increased their knowledge and skills for natural resource management in Massachusetts communities

*651 youth learned new knowledge and skills in the area of science

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #7

1. Outcome Measures

Youth are effective in planning, organizing, resource management and record keeping

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	250	550

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

*550 youth kept accurate records

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #8

1. Outcome Measures

Youth develop the knowledge and skills to become better planners

Not reporting on this Outcome for this Annual Report

Outcome #9

1. Outcome Measures

Youth increase their organizational skills

Not reporting on this Outcome for this Annual Report

Outcome #10

1. Outcome Measures

Youth develop the knowledge and skills to manage their resources

Not reporting on this Outcome for this Annual Report

Outcome #11

1. Outcome Measures

Youth develop the knowledge and skills to keep records

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	500	406

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)****What has been done****Results**

*406 youth learned how to keep accurate records and summarize information appropriately

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #12**1. Outcome Measures**

Youth are effective team members, communicators, and leaders

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	200	105

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Massachusetts Envirothon helps young people to grow into competent, caring, capable, engaged, and well-informed citizens who are prepared to contribute to their communities in the 21st century. The project offers well-designed challenges for youth teams and provides adult coaches with background information and community connections that will help them be effective in their work with youth on community issues.

What has been done

UMass Extension contributes to the Massachusetts Envirothon Collaboration in three general ways: development of the Current Issue Curriculum for each year, informing best practices in youth development and teacher professional development, and providing evaluation services.

Results

*105 youth were involved with Massachusetts Envirothon teams that achieved a score of at least 80% on their current issue presentations

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #13

1. Outcome Measures

Youth increase their team membership skills.
Not reporting on this Outcome for this Annual Report

Outcome #14

1. Outcome Measures

Youth increase their communication skills.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	400	1093

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Through the 4-H program visual presentation programs, youth develop communication skills that will be valuable for their future success.

What has been done

Events conducted at the county, regional and state level where youth compete to deliver effective oral presentations

Results

*740 youth learned oral and written skills that made them better communicators
 *353 Youth learned oral and written skills that made them better communicators

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #15

1. Outcome Measures

Youth increase their knowledge of the components of effective leadership
Not reporting on this Outcome for this Annual Report

Outcome #16

1. Outcome Measures

Youth build successful partnerships with adults

Not reporting on this Outcome for this Annual Report

Outcome #17

1. Outcome Measures

Youth increase their ability to relate to and partner with adults.

Not reporting on this Outcome for this Annual Report

Outcome #18

1. Outcome Measures

Youth adopt behaviors that will help them succeed academically and in the workplace

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	50	157

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

UMass Extension's New Communities Project addresses Youth Development and Engagement by helping youth to cultivate the skills and behaviors that will help them to succeed academically and in the workplace. We conduct projects in North Adams, MA and in the in the greater Boston area for youth who are on probation with the goal of reducing the likelihood that youth will re-enter the juvenile justice system while building job skills.

What has been done

In North Adams, three separate groups of youth met for a period of ten weeks each and were involved in workshops on decision-making, conflict resolution, problem- solving, communication, goal-setting, aspiration-building, character-building, and workforce readiness. In South End/Lower Roxbury, Extension Educators collaborated with four community- based organizations in the Boston area offering a variety of workshops focused on workforce and college readiness, communication skills, and conflict.

Results

*37 Youth applied for and maintained employment during the school year or summer months

*120 Youth participants completed a job application and/or wrote a resume

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #19

1. Outcome Measures

Youth increase skills for acquiring and maintaining employment.

Not reporting on this Outcome for this Annual Report

Outcome #20

1. Outcome Measures

Youth develop knowledge and skills that will help them succeed academically

Not reporting on this Outcome for this Annual Report

Outcome #21

1. Outcome Measures

Program staff from youth-serving organizations make effective use of youth development best practices

Not reporting on this Outcome for this Annual Report

Outcome #22

1. Outcome Measures

Program staff from youth serving organizations increase their knowledge of the components that contribute to a successful youth development program

Not reporting on this Outcome for this Annual Report

Outcome #23

1. Outcome Measures

Youth will improve diet and physical activity behaviors, to prevent overweight and obesity.

Not reporting on this Outcome for this Annual Report

Outcome #24

1. Outcome Measures

Youth will increase knowledge of healthful diets and physical activity, to prevent overweight and obesity.

Not reporting on this Outcome for this Annual Report

Outcome #25

1. Outcome Measures

Participants develop the knowledge and skills to adhere to principles of sustainability and smart growth

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	190

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

*190 youth increased their understanding of outdoor recreation planning in Massachusetts communities

4. Associated Knowledge Areas

KA Code	Knowledge Area
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805 Community Institutions, Health, and Social Services
724 Healthy Lifestyle

Outcome #26**1. Outcome Measures**

Youth are more effective communicators

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	60

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

*60 Youth expressed themselves clearly to adults and other youth

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

V(H). Planned Program (External Factors)**External factors which affected outcomes**

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)**1. Evaluation Studies Planned**

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

Program #8**V(A). Planned Program (Summary)****1. Name of the Planned Program**

Food Production

V(B). Program Knowledge Area(s)**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
205	Plant Management Systems	25%			
307	Animal Management Systems	25%			
601	Economics of Agricultural Production and Farm Management	25%			
604	Marketing and Distribution Practices	10%			
723	Hazards to Human Health and Safety	15%			
	Total	100%			

V(C). Planned Program (Inputs)**1. Actual amount of professional FTE/SYs expended this Program**

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	6.9	0.0	0.0	0.0
Actual	10.7	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
199980	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
677225	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1491567	0	0	0

V(D). Planned Program (Activity)**1. Brief description of the Activity**

- Analytic tools and techniques
- Applied research
- CD, DVD, Podcast or other educational media
- Committee
- Conference
- Consulting
- Demonstration
- Diagnostic Service
- Newsletter
- Professional/trade magazine
- Proposal or Grant Development
- Research or Technical Report
- Single day workshop, class or event
- Site Visit
- Technical report/manual
- Website
- Workshop series or educational course

2. Brief description of the target audience

The primary audience for this plan is food producers and food production organizations. This not only includes those that are well-established, but also those that are new, immigrant, and part-time. Both conventional and organic farmers are included. Others audiences include government agencies (including schools and institutions), non-profits, community based organizations such as food pantries and food banks that provide food to low-income families, and the public (including low income and urban).

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	4253	11416	0	0
2008	86657	237893	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	1	0	
2008	0	0	0

V(F). State Defined Outputs

Output Target

Output #1**Output Measure**

- Conferences

Year	Target	Actual
2008	2	5

Output #2**Output Measure**

- Demonstrations

Year	Target	Actual
2008	22	56

Output #3**Output Measure**

- Diagnostic Services

Year	Target	Actual
2008	250	2570

Output #4**Output Measure**

- Facilitated Meetings

Not reporting on this Output for this Annual Report

Output #5**Output Measure**

- Individual Consultations (phone, email)

Not reporting on this Output for this Annual Report

Output #6**Output Measure**

- Invited Speakers

Not reporting on this Output for this Annual Report

Output #7**Output Measure**

- Single day workshops, classes or events

Year	Target	Actual
2008	4	48

Output #8**Output Measure**

- Site visits

Year	Target	Actual
2008	66	61

Output #9**Output Measure**

- Workshop series or educational courses

Year	Target	Actual
2008	52	18

Output #10**Output Measure**

- Fact Sheets

Not reporting on this Output for this Annual Report

Output #11**Output Measure**

- Needs Assessments

Not reporting on this Output for this Annual Report

Output #12**Output Measure**

- Newsletters

Year	Target	Actual
2008	35	114

Output #13**Output Measure**

- Websites

Year	Target	Actual
2008	1	10

Output #14**Output Measure**

- Web content/web page contributions

Not reporting on this Output for this Annual Report

Output #15**Output Measure**

- Applied Research

Year	Target	Actual
2008	11	44

Output #16**Output Measure**

- Journal Articles (Peer reviewed)

Not reporting on this Output for this Annual Report

Output #17**Output Measure**

- Technical Reports/Manuals

Year	Target	Actual
2008	4	3

Output #18**Output Measure**

- CD, DVD, Podcast or other educational media

Year	Target	Actual
2008	{No Data Entered}	13

Output #19**Output Measure**

- Professional/Trade Magazine

Year	Target	Actual
2008	{No Data Entered}	6

Output #20**Output Measure**

- Analytic tools and techniques

Year	Target	Actual
2008	{No Data Entered}	1

V(G). State Defined Outcomes**V. State Defined Outcomes Table of Content**

O No.	OUTCOME NAME
1	Participants promote, implement or adopt sustainable resource management and environmental best management practices for operating Natural Resources-based businesses
2	Participants have the knowledge and skills to promote, implement or adopt sustainable resource management and environmental best management practices for operating Natural Resources-based businesses
3	Participants will adopt practices that lower the risk from and exposure to pesticides and fertilizers
4	Participants will acquire the knowledge and skills to lower their risk from and exposure to pesticides and fertilizers
5	Participants adopt practices that ensure the economic viability of natural resource-based businesses.
6	Participants increase their knowledge and skill for practices that increase the economic viability of natural resource-based businesses
7	Participants develop and market locally generated products and services more effectively.
8	Participants increase their knowledge and skills to develop and market locally generated products and services more effectively
9	Participants will promote expanded access to and reliance on local foods by individuals, families and institutions.
10	Participants increase the knowledge and skills and motivation to expand access to and reliance on local foods by individuals, families and institutions.
11	Participants develop the knowledge and skills to adopt land management practices that protect and enhance water, other natural resources and ecosystems
12	Participants develop the knowledge and skills to adopt sustainable resource management and environmental best management practices for operating natural resource-based businesses
13	Natural resource-based businesses will adopt practices that protect water resources
14	Participants acquire the knowledge, skills and motivation to adopt practices that reduce risk of exotic pests, diseases and invasive species

Outcome #1**1. Outcome Measures**

Participants promote, implement or adopt sustainable resource management and environmental best management practices for operating Natural Resources-based businesses

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	75	222

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)**

Sustainable vegetable production requires new technical solutions to problems of crop nutrition, soil, water, energy and pest management. As Massachusetts undergoes cultural and economic changes, both new and established growers must learn to produce crops sustainably and to adapt cropping systems to new market opportunities in Massachusetts.

What has been done

We provide information in a variety published formats that include newsletters, field manuals and management guides. Our team develops and delivers a variety of workshops, conferences, and educational events and provides leadership and key content for regional training efforts. In addition to outreach and education, a key function for our team is conducting applied vegetable science that contributes to a disciplinary knowledge base and provides the foundation for our research-based outreach and education programs.

Results

*1 farmer adopted a perimeter trap crop system in winter squash to reduce environmental impact from pesticide use; *3 farmers grew and marketed grain corn for heat as a carbon neutral alternative to fossil fuels; *8 farmers switched to biomass fuel to reduce the environmental impact of fossil fuels; *15 growers implemented biological control practices in corn as a means of environmentally sustainable pest management; *6 growers began using pheromone traps to monitor pest flight in pepper crops in order to correctly time sprays for maximum efficacy, thus reducing the environmental costs associated with excessive or unnecessary insecticide applications; *6 growers implemented biological control practices in pepper crops as a means of environmentally sustainable pest management

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
723	Hazards to Human Health and Safety
601	Economics of Agricultural Production and Farm Management
307	Animal Management Systems

Outcome #2**1. Outcome Measures**

Participants have the knowledge and skills to promote, implement or adopt sustainable resource management and environmental best management practices for operating Natural Resources-based businesses

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	140	580

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

- *70 growers learned more about accurate cucurbit disease diagnosis and management
- *181 growers learned about using perimeter trap crop systems to reduce pesticide use
- *75 growers learned about using biological controls to reduce pesticide use in sweet corn and peppers
- *75 growers learned about using pheromone traps as a scouting tool to reduce pesticide use in sweet corn and peppers

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety
205	Plant Management Systems
307	Animal Management Systems

Outcome #3

1. Outcome Measures

Participants will adopt practices that lower the risk from and exposure to pesticides and fertilizers

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	200	855

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

100 Fruit-growers used more reduced-risk pesticides and pest control tactics; 1 grower adopted a perimeter trap crop system that reduced insecticide use by up to 90%; 15 growers began using pheromone traps to monitor pest flights in corn in order to correctly time sprays for maximum efficacy, thus reducing the risks associated with excessive or unnecessary insecticide applications; 15 growers implemented biological control practices in corn as a means of reducing the risk from and exposure to pesticides; 6 growers began using pheromone traps to monitor pest flights in pepper crops in order to correctly time sprays for maximum efficacy; 6 growers implemented biological control practices in pepper crops as a means of reducing the risk from and exposure to pesticides

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
723	Hazards to Human Health and Safety

Outcome #4

1. Outcome Measures

Participants will acquire the knowledge and skills to lower their risk from and exposure to pesticides and fertilizers
Not reporting on this Outcome for this Annual Report

Outcome #5

1. Outcome Measures

Participants adopt practices that ensure the economic viability of natural resource-based businesses.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	100	134

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Massachusetts growers must continually strive to improve production efficiency, expand species diversity, explore marketing opportunities, understand farm ecology, and evaluate profitability. A successful partnership between Massachusetts food producers and UMass Extension will foster a more secure, diverse and healthful food supply for the Commonwealth.

What has been done

Faculty and staff generate the research and resources that promote sustainable food production and marketing. Information is disseminated through various publications, meetings, web resources and individual consultations that all contribute to the overall objective of helping to sustain food production in Massachusetts and the region.

Results

50 Growers adopted new technology to improve production efficiency and minimize environmental impact; 10 Growers expanded or improved orchard size; 1 farmer adopted a perimeter trap crop system in winter squash to reduce pesticide costs; 16 growers used cultural or biological practices or perimeter trap cropping to manage pests of vegetables; 2 farmers grew and marketed grain corn for heat; 8 farmers switched to biomass fuel; 20 growers adopted biological control practices in corn as a means of pest management; 15 growers began using pheromone traps to monitor pest flights in corn crops; 6 growers adopted biological control practices in pepper crops; 6 growers began using pheromone traps to monitor pest flights in pepper crops

4. Associated Knowledge Areas

KA Code	Knowledge Area
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601	Economics of Agricultural Production and Farm Management
205	Plant Management Systems
604	Marketing and Distribution Practices
307	Animal Management Systems

Outcome #6**1. Outcome Measures**

Participants increase their knowledge and skill for practices that increase the economic viability of natural resource-based businesses

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	200	293

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

*10 staff from NRCS agencies learned about how growers can use IPM methods to increase the economic viability of their vegetable farms

*181 growers learned about reducing their pesticide costs by using a perimeter trap crop system

*51 growers learned about using biological control practices in corn as a means of pest management to offset the rising cost of chemical insecticides, and the fuel and labor costs associated with insecticide application

*51 growers learned about using pheromone traps to monitor pest flights in order to correctly time sprays for maximum efficacy, thus reducing costs associated with excessive or unnecessary insecticide applications

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
205	Plant Management Systems
604	Marketing and Distribution Practices
307	Animal Management Systems

Outcome #7**1. Outcome Measures**

Participants develop and market locally generated products and services more effectively.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	50	291

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

*25 Tree fruit growers planted new varieties and diversified production

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
604	Marketing and Distribution Practices

Outcome #8

1. Outcome Measures

Participants increase their knowledge and skills to develop and market locally generated products and services more effectively
Not reporting on this Outcome for this Annual Report

Outcome #9

1. Outcome Measures

Participants will promote expanded access to and reliance on local foods by individuals, families and institutions.
Not reporting on this Outcome for this Annual Report

Outcome #10

1. Outcome Measures

Participants increase the knowledge and skills and motivation to expand access to and reliance on local foods by individuals, families and institutions.
Not reporting on this Outcome for this Annual Report

Outcome #11

1. Outcome Measures

Participants develop the knowledge and skills to adopt land management practices that protect and enhance water, other natural resources and ecosystems

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	200

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)****What has been done****Results**

*200 vegetable growers adopted best management practices outlined in newsletters, fact sheets, and presented in educational sessions

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety
205	Plant Management Systems
601	Economics of Agricultural Production and Farm Management

Outcome #12**1. Outcome Measures**

Participants develop the knowledge and skills to adopt sustainable resource management and environmental best management practices for operating natural resource-based businesses

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	100

3c. Qualitative Outcome or Impact Statement**Issue (Who cares and Why)****What has been done****Results**

*100 Growers increased their knowledge of best management practices that protected the environment.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
205	Plant Management Systems
723	Hazards to Human Health and Safety

Outcome #13**1. Outcome Measures**

Natural resource-based businesses will adopt practices that protect water resources

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	341

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
723	Hazards to Human Health and Safety

Outcome #14**1. Outcome Measures**

Participants acquire the knowledge, skills and motivation to adopt practices that reduce risk of exotic pests, diseases and invasive species

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	500

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
601	Economics of Agricultural Production and Farm Management
723	Hazards to Human Health and Safety

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- Case Study

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}